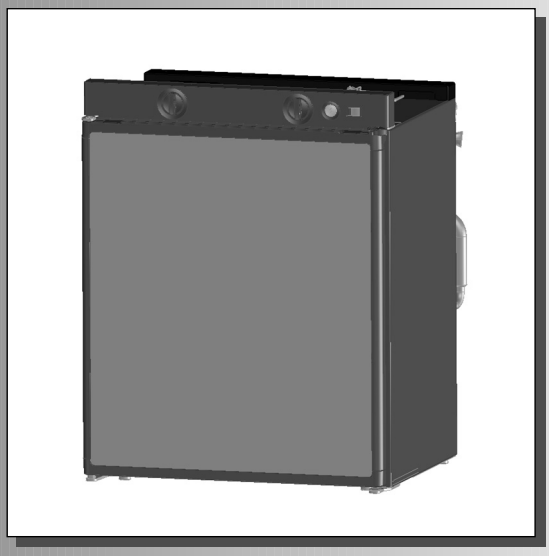
Dometic

Installation instructions

Absorption Refrigerator for Recreation Vehicles

RM 5310 RM 5330 RM 5380



CE e1

MBA 11/2011

N 1

AUS / NZ

Type C40 / 110

821 2690 - 99

Dometic GROUP

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Dometic

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WARNING!

DO NOT USE A FLAME TO CHECK FOR GAS LEAKS

WARNING!

Most LP gas appliances used in recreational vehicles are vented to the outside of the vehicle. When parked close to a gasoline pump, it is possible that the gasoline fumes could enter this type of appliance and ignite from the burner flame, CAUSING A FIRE OR AN EXPLOSION.

FOR YOUR SAFETY, it is recommended that all LP gas appliances which are vented to the outside should be shut off when refueling.

The refrigerator must be shut off during refueling.

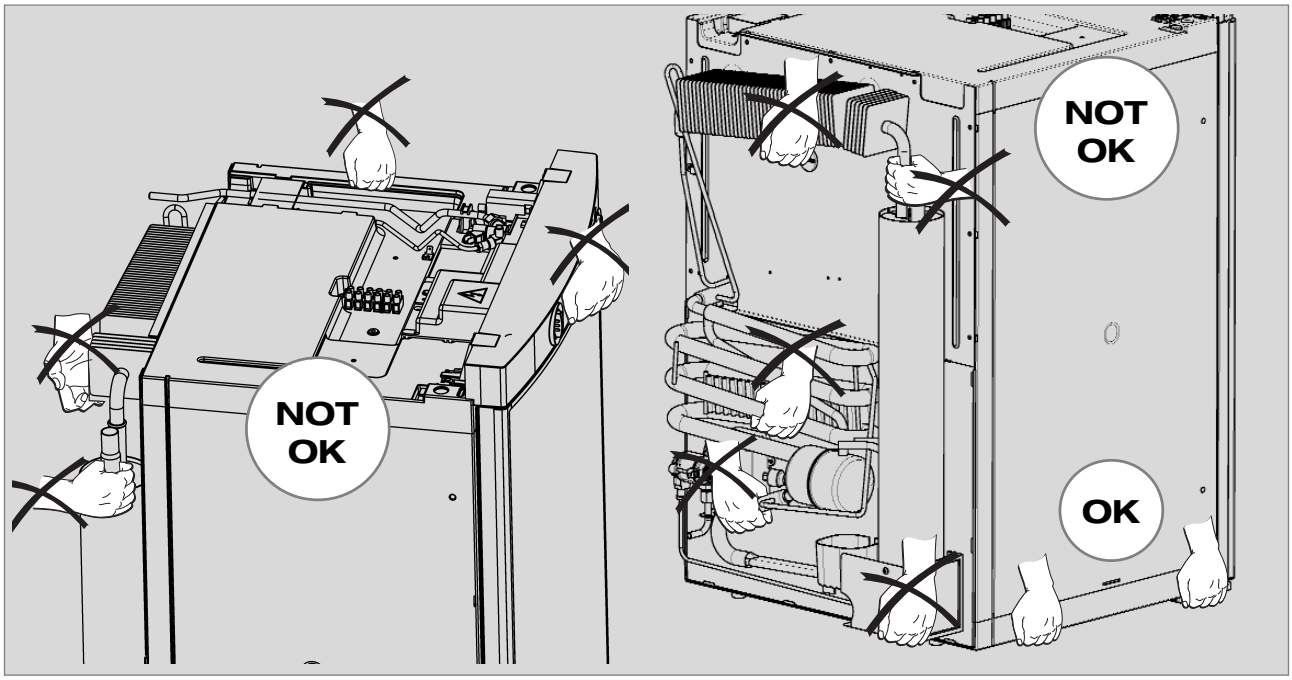
0.0 Unpacking and transport

Lifting / carrying the refrigerator

CAUTION!

- **Never use for lifting or carrying other parts of the refrigerator (i.e. cooling unit, gas pipe, frontpanel) !**

  The refrigerator will be damaged !



1.0 General

1.1 Introduction

On installation of the appliance, the technical and administrative regulations of the country in which the vehicle will first be used must be adhered to. Otherwise the refrigerator must be installed as described in these instructions.

1.2 Guide to these installation instructions

Before you start installing the refrigerator, please read the installation instructions carefully.

These instructions provide you with the necessary guidance for the proper installation of your refrigerator. **Observe in particular the safety instructions.** Observation of the instructions and handling recommendations is important for dealing with the refrigerator safely and for protecting you from injury and the refrigerator from damage. You must understand what you have read before you carry out a task.

Keep these instructions in a safe place so they may be referred to at any time.

1.3 Copyright protection

1.4 Explanation of symbols used in this manual

Warning notices

Warning notices are identified by symbols. A supplementary text gives you an explanation of the degree of danger.

Observe these warning notices rigorously. You will thus protect yourself and other people from injury, and the appliance from damage.

DANGER!

DANGER indicates an imminent hazardous situation which, if not avoided, could result in death or serious injury.

WARNING!

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury

CAUTION!

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION!

CAUTION (used without the safety alert symbol) indicates a potentially hazardous situation which, if not avoided, may result in damage to the appliance.

Information

INFORMATION gives you supplementary and useful guidance when dealing with your refrigerator.

Environmental Tips

ENVIRONMENTAL TIPS gives you useful guidance for saving energy and disposal of the appliance.

1.5 Warranty

Warranty arrangements are in accordance with the normal conditions applicable for the country concerned. For warranty or other maintenance, please contact our customer services department. Any damage due to improper use is not covered by the warranty. The warranty does not cover any modifications to the appliance or the use of **non-original Dometic** parts. The warranty does not apply if the installation and operating instructions are not adhered to and no liability shall be entertained.

Deviations from these installation instructions without prior notification of Dometic result in Dometic's warranty obligations becoming void!

1.6 Limitation of liability

All information and guidance in these operating instructions were prepared after taking into consideration the applicable standards and regulations as well as the current state of the art. **Dometic** reserves the right to make changes at any time which are deemed to be in the interest of improving the product and safety.
Dometic will assume no liability for damage in the case of :

- non-observation of the operating instructions
- application not in accordance with the regulations or provisions
- use of non-original spare parts
- modifications and interferences to the appliance
- effect of environmental influences, such as
  - temperature fluctuations
  - humidity

1.7 Environmental notices

Refrigerators manufactured by Dometic GmbH are free of CFC/HCFC and HFC. Ammonia (a natural compound of hydrogen and nitrogen) is used in the cooling unit as a coolant. Non-ozone-hazardous cyclopentane is used as a propellant for manufacturing PU foam insulation.

Disposal

In order to ensure that the recyclable packaging materials are re-used, they should be sent to the customary local collection system.

2.0 Safety instructions

2.1 Application according to regulations

This refrigerator is designed for installation in recreation vehicles such as caravans or motorhomes. The appliance has been type-approval tested for this application in accordance with the EC Gas Directive.

The refrigerator is to be used solely for storing foodstuffs.

CAUTION!

The refrigerator must not be exposed to rain.

2.2 User's responsibility

Anyone operating the refrigerator must be familiar with the safe handling and understand the advice in the operating instructions (part no. 821 2690-94).

2.3 Working upon and checking the refrigerator

WARNING!

Work on gas equipment, exhaust system and electrical facilities must be carried out by authorised personnel only. Substantial damage to property and/or injury to persons can arise through unprofessional procedures.

DANGER!

Never use an unshielded flame to check gas bearing parts and pipes for leakage!

There is a danger of fire or explosion.

WARNING!

Never open the absorber cooling unit! It is under high pressure.

There is a danger of injury!

2.4 Operating the refrigerator with gas

It is imperative that the operating pressure corresponds to the data specified on the rating plate of the appliance. Compare the operating pressure of the rating plate with the data specified on the pressure reducing valve of the liquid gas cylinder.

3.0 Description of model

3.1 Model identification

Example :

RM 5310

with battery igniter*

Model variant

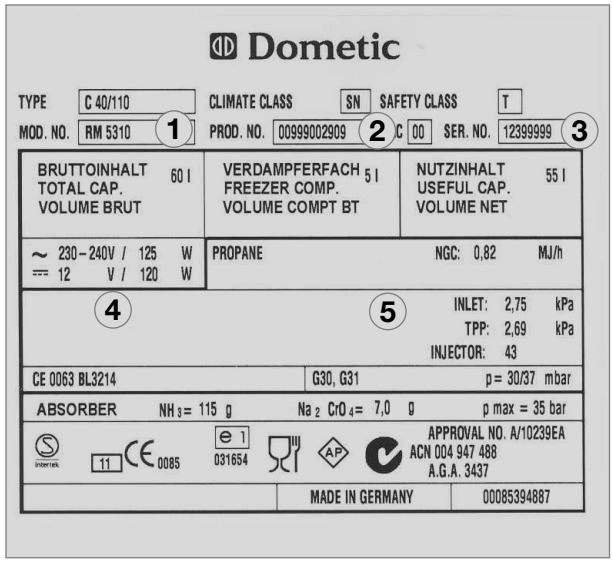
Model range

Refrigerator Mobile /
Mobile Absorption Refrigerator

* = manual ignition with **battery igniter**

3.2 Refrigerator rating plate

The rating plate is to be found on the inside of the refrigerator. It contains all important details of the refrigerator. You can read off from this the model identification, the product number and the serial number. You will need these details whenever you contact the customer service centre or when ordering spare parts.



Example *Fig. 1*

1. Model number
2. Product number
3. Serial number
4. Electrical rating details
5. Gas pressure

3.3 Technical data

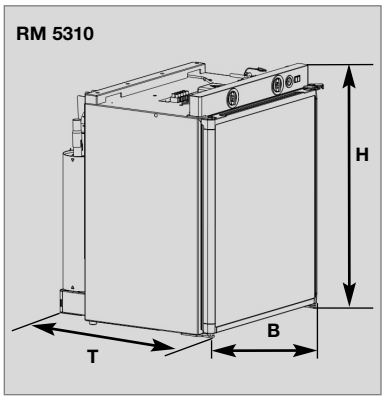


Fig. 2

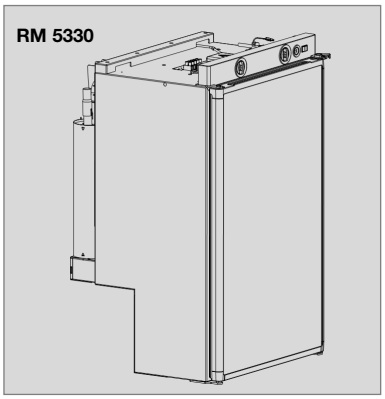


Fig. 3

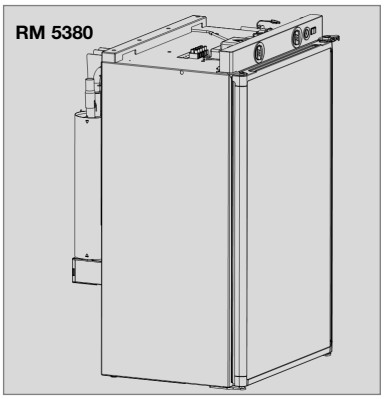


Fig. 4

Model	Dimensions H x W x D (mm) Depth incl. door	Gross capacity	freezer compartment	Rating details mains/battery	Consumption * electricity/gas over 24hrs	Net weight	Ignition Piezo	Automat
RM 5310	618x486x474	60 lit.	5 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	20 kg	•	
RM 5330	821x486x474	70 lit.	5 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	22 kg	•	
RM 5380	821x486x474	80 lit.	5 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	24 kg	•	

Subject to technical changes.

*Average consumption measured at an average ambient temperature of 25°C in pursuance of ISO Standard.

4.0 Installation instructions

4.1 Installation

WARNING!

The appliance may be installed by authorised personnel only!

The unit and the exhaust duct system must be in principle installed so that it is accessible for maintenance work, can be easily installed and dismantled and removed from the vehicle without great effort.

Installation and connection of the appliance must comply with the latest technical regulations, as follows:

- **The electrical installation must comply with national and local regulations.**
- **Electrical wiring regulations**
- **The gas installation must comply with national and local regulations.**
- **AS 5601- Gas Installations**

  NZ 5262 - Gas Appliance Safety
- **The appliance must be installed in such a way that it is shielded from excessive heat radiation.**

Excessive heat impairs performance and raises the energy consumption of the refrigerator!

Deviations from these installation instructions without prior notification of Dometic result in Dometic GmbH's warranty obligations becoming void!

4.1.1 Side installation

If the appliance is installed on the same side of the vehicle as the entrance door, it is desirable that the door does not cover the refrigerator's vents. (Fig. 5, Clearance door/ventilation grille at least 25 mm). Otherwise ventilation could be impaired which causes a loss in cooling performance. Awnings are often placed at the door side of a caravan. This complicates evacuation of combustion gases and heat through the ventilation grilles (loss in cooling performance)!

(Fig.5) The air vent grilles are blocked. There must be a distance between the door and the air vents of at least 25 mm!

If the door/grille distance is between 25 mm and 45 mm, we recommend installing a **Dometic ventilation kit** to achieve an optimal cooling performance in high ambient temperatures.

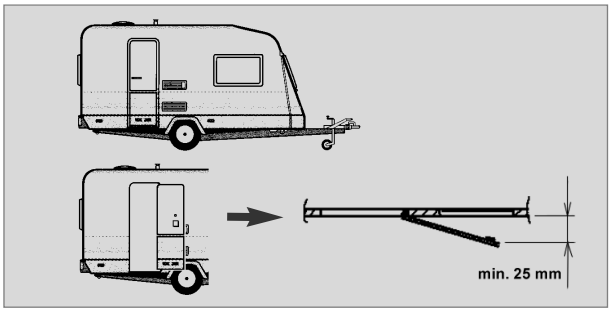


Fig. 5

(Fig. 6) The air vent grilles offer an unobstructed dissipation of heat and exhaust gas even when the door is opened.

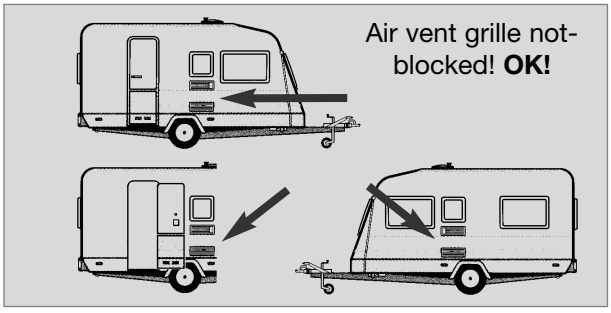


Fig. 6

4.1.2 Rear installation

Rear installation often causes an unfavourable installation arrangement, as ideal ventilation cannot always be assured (e.g. the lower ventilation grille is covered by the bumper or the rear lights of the vehicle!) (Fig. 8). The maximum cooling performance of the aggregate is actually not available.

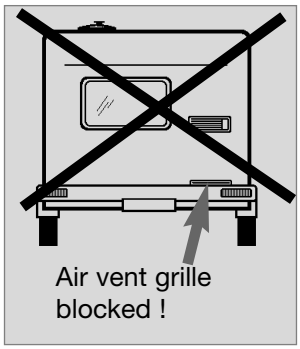


Fig. 8

Fig. 9

Another unfavourable method of rear installation is to install the air intake and exhaust grilles (Fig. 10) at the side wall of the recreation vehicle. The air-heat recirculation is very restricted which means that heat exchangers (condenser, absorber) cannot be adequately cooled. The optional method of an additional air vent grille installed in the floor also exhibits an insufficient air flow duct.

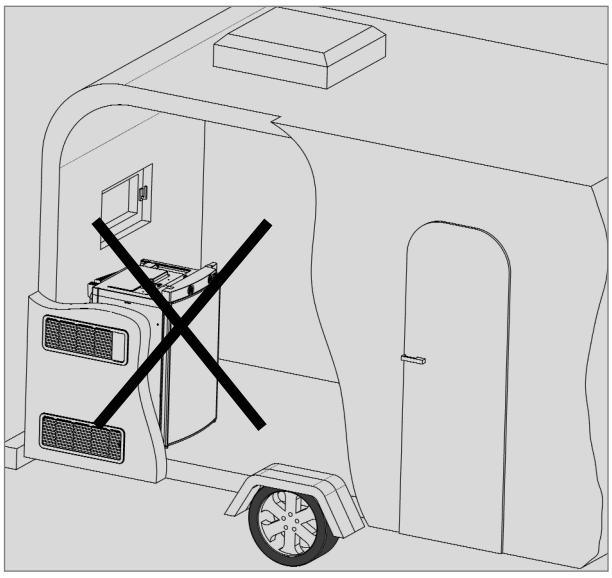


Fig. 10

CAUTION!

The maximum cooling performance is not available! Do not apply this installation method, as it does not provide proper ventilation! Please refer to the description in section 4.2 .

4.1.3 Draught-proof installation

Refrigerators in motorhomes, caravans or other vehicles must be installed in a draught-proof manner . This means that the combustion air for the burner is not taken from the living space and that exhaust fumes are prevented from entering the living space.

Adequate sealing between the back of the refrigerator and the vehicle interior has to be provided.

Dometic strongly recommends carrying this out using a flexible seal (in order to simplify later removal and installation of the unit for maintenance purposes.

WARNING!

By no means use durable sealing compounds, fitting foam or similar material to realise draught-proof installation of the refrigerator! Do NOT use any easily inflammable materials for sealing (in particular silicon sealing compound or similar). Risk of fire! The device manufacturer's product liability and warranty shall lapse if such materials are used.

Proposal 1

The lip seals (1) are installed at the bottom and on each side in the installation recess (Fig. 11-13). A heat deflector plate (2) is installed in the

installation recess above the refrigerator. **Affix the this plate to the caravan wall, do NOT attach to the refrigerator !**

Attach the deflector plate so that the heated air escapes through the top ventilation grill into the open air and no heat build-up can be produced.

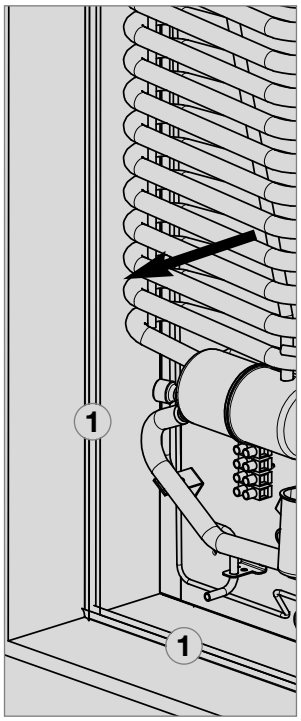


Fig. 11

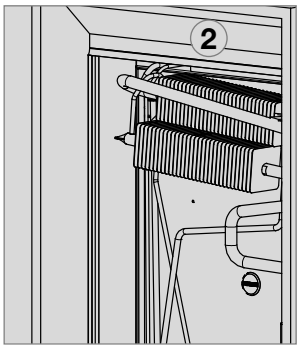


Fig. 12

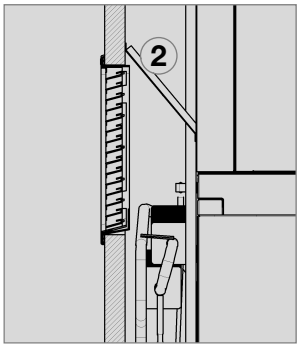


Fig. 13

The refrigerator is later pushed into the installation recess from the front. Ensure that the seals abut the case evenly.

This installation option facilitates the removal and installation of the appliance for servicing.

Proposal 2

Fasten the sealing lips to a stop bar on the rear side (1), e.g. by gluing.

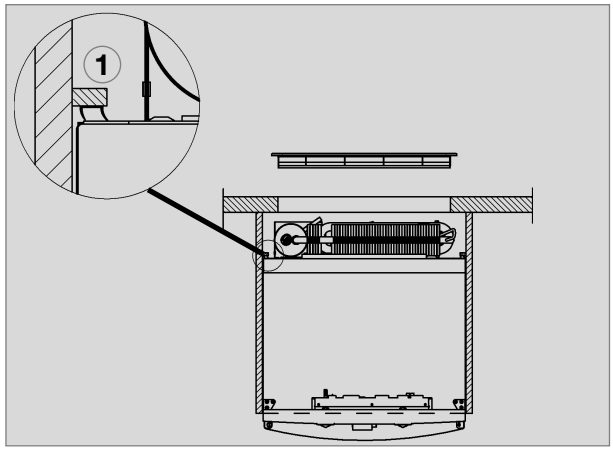


Fig. 14/15

The cavity in-between the outer vehicle wall and refrigerator is completely isolated from the vehicle interior. Intrusion of exhaust fumes into the living space is prevented. Fumes will escape through the upper ventilation grille to the outside.

Deviations require the consent of the manufacturer!

4.2 Ventilation and air extraction of the refrigerator

A correct installation of the refrigerator is essential for its correct operation, as due to physical reasons heat builds up at the back of the appliance which must be allowed to escape into the open air.

In the event of high ambient temperatures, full performance of the cooling unit can only be achieved by means of adequate ventilation and extraction.

Ventilation is provided for the unit by means of two apertures in the caravan wall. Fresh air enters at the bottom, extracts the heat and exits through the upper vent grille (chimney effect). **The upper ventilation grille should be positioned as high as possible above the condenser (1,2 , Fig.17). Install the lower ventilation grille at floor level of the recess**, allowing unburnt gas (heavier than air) to escape directly into the open air.

The gas burner must be located above the edge (1, Fig. 15).

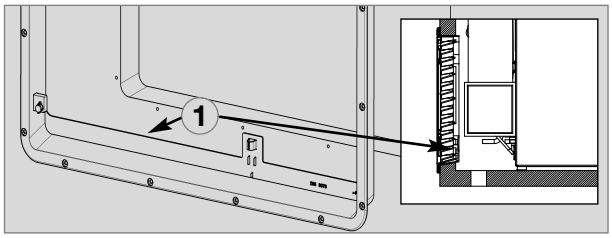


Fig. 15

An optional ventilation aperture can be introduced introduced by the manufacturer of the vehicle into the recess floor in order to avoid the accumulation of unburnt gas on the floor.

Principle of ventilation

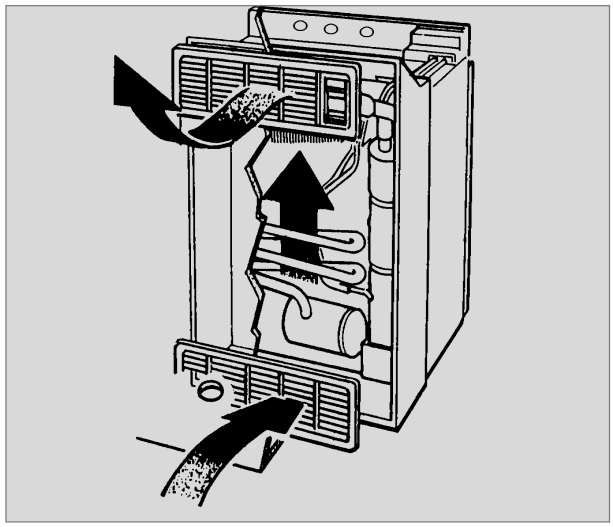


Fig. 16

Position ventilation grilles / RM 5310, 5330

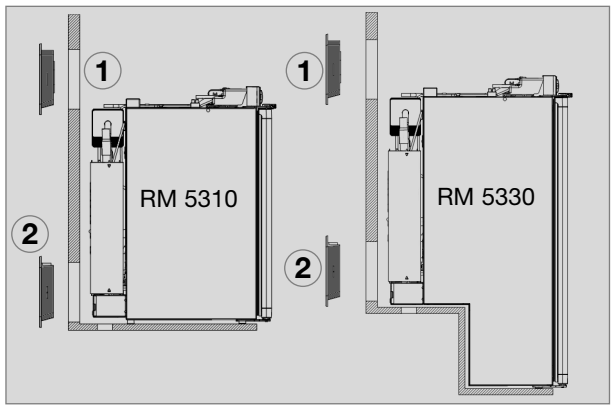


Fig. 17

1 Ventilation grille LS 100 or LS 200
2 Ventilation grille LS 200

Position ventilation grilles / RM 5380

With this arrangement of the ventilation grilles, a ventilation aperture **(3)** must be introduced by the manufacturer of the vehicle into the recess floor in order to avoid the accumulation of unburnt gas on the floor.

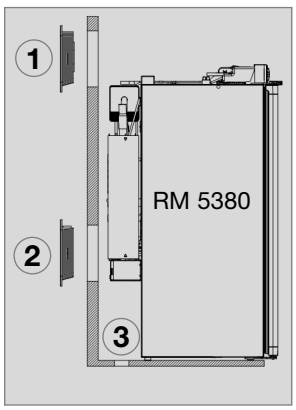


Fig. 18

4.3 Installing the ventilation system

4.3.1 Ventilation systems

Dometic recommends the **A 1625** ventilation and flue gas extraction system which has been tested and approved for this purpose. These ventilation grills provide the required open cross-section of at least 250 cm².

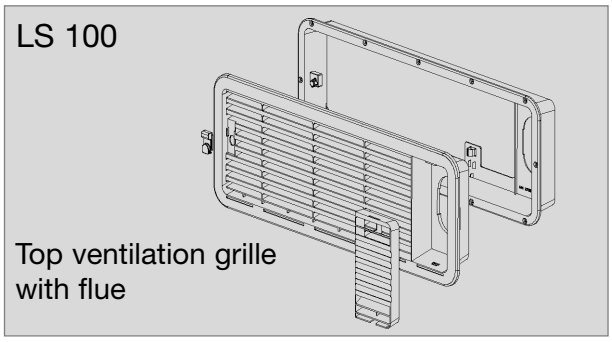


Fig. 19

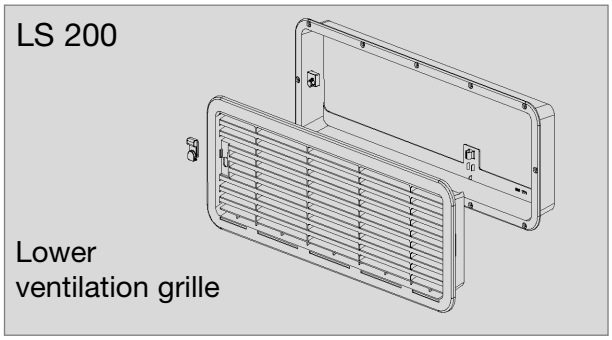


Fig. 20

4.3.2 Installing LS 100/LS 200

To install the ventilation grilles **LS 200**, cut two rectangles (**451mm x 156mm**) in the outer wall of the vehicle (*for position of the cuts, s*see Fig. 16).

LS 100

1

Seal the mounting frame making it waterproof (*does not apply for mounting frames with integral seal*).

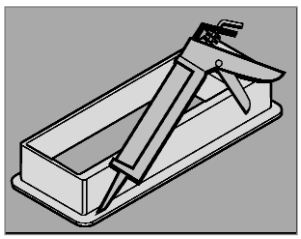


Fig. 23

2

Insert frame and screw into position

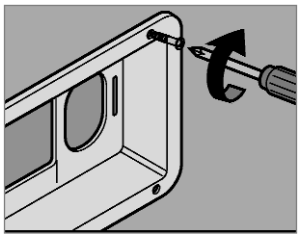


Fig. 24

3

Insert and lock ventilation grille.

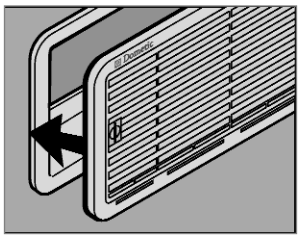


Fig. 25

4

Clip the insert for flue gas duct in position (*only for L100 upper ventilation system kit*).

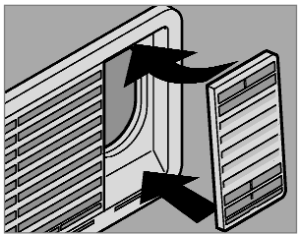


Fig. 26

To install the ventilation grilles, cut two rectangles (**451 mm x 156 mm**) in the outer wall of the vehicle (*for position of the cuts, see point 4.2*).

1

Seal the mounting frame making it waterproof (*does not apply for mounting frames with integral seal*).

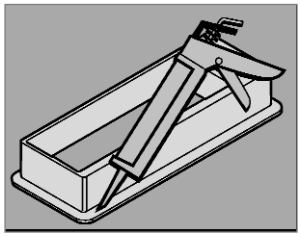


Fig. 20

2

Insert frame and screw into position

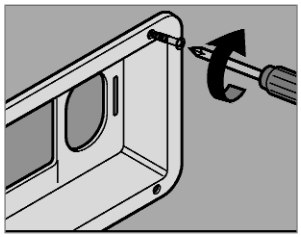


Fig. 21

3

Insert and lock ventilation grille.

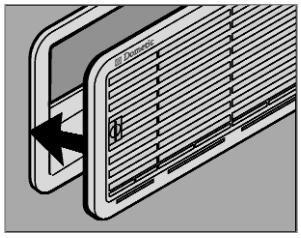


Fig. 22

4

Clip the insert for flue gas duct in position (*only for L100 upper ventilation system kit*).

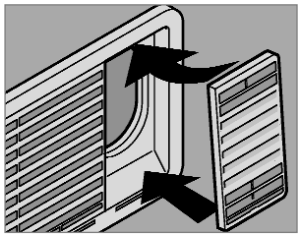


Fig. 23

5

Insert winter cover.

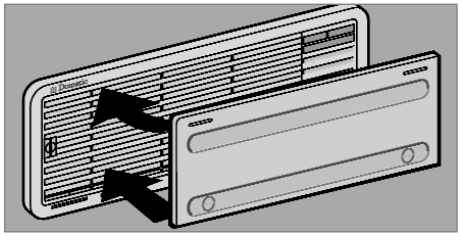


Fig. 24

4.4 Exhaust gas duct and installing the fume flue

The exhaust gas duct system must be made in such a manner as to achieve a complete extraction of combustion products to the outside of living space. The duct system must slope in an upward direction in order to avoid a build-up of condensate. The type of exhaust gas duct shown in Fig. 25 allows the installation of the winter cover next to **A** (Fig. 25).

CAUTION!

An installation other than described will reduce the cooling capacity and jeopardise the manufacturer's warranty/product liability.

Installing the standard fume flue (Fig. 25)

1.
Connect T-piece (E) to adaptor (F) or flue pipe (K) as required and affix with screw (G). Ensure that heat baffle (H) is lodged in the correct position.

2.
Insert flue pipe with cover plate (C) through the appropriate aperture in the upper frame (I) and connect to T-piece (E). If necessary, shorten flue pipe (C) to the required length.

3.
Insert **LS 100** ventilation grille (D) into mounting frame (I) and fasten, using the locking handle on the left of the grille.

4.
Put cap (B) on flue pipe (C).

5.
Insert extractor insert (A) into ventilation grille (D).

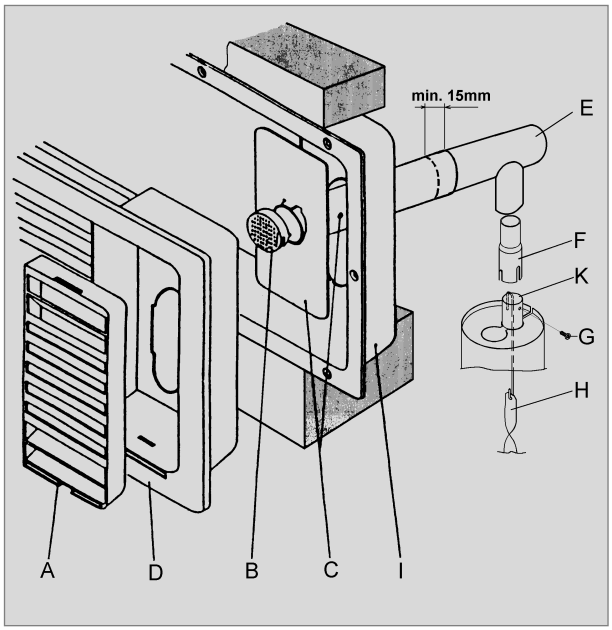


Fig. 25

4.5 Installation recess

The refrigerator must be installed draught-proof in a recess (also refer to Section "4.1.4"). The measurements of the recess are stated in the table below. **Step A** (Fig. 26) is only required for cabinets with a step. The floor of the recess must be level, allowing the appliance to be pushed easily into its correct position. The floor must be substantial enough to bear the weight of the appliance.

4.5.1 Installation in the recess

Push the appliance far enough into the recess until the front edge of the refrigerator casing is aligned with the front of the recess. Allow a **gap of 15-20** mm between the back wall of the recess and the refrigeration unit.

Ensure that the refrigerator is installed level in the recess.

4.5.2 Recess dimensions

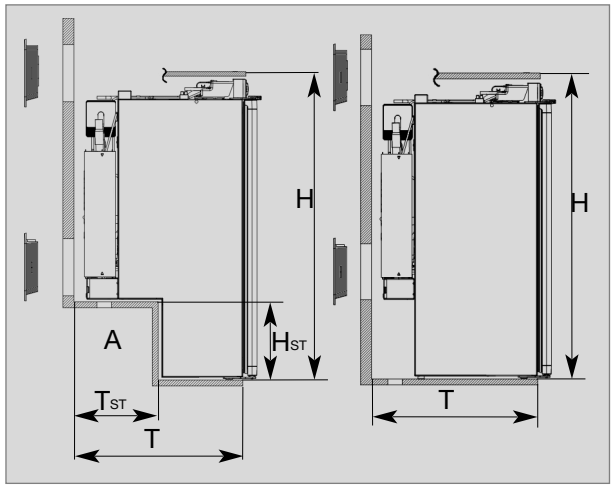


Fig. 26

Model RM 5310

Height	Width	Depth
620 mm	490 mm	450 mm

Model RM 5330

Height	Width	Depth
825 mm	490 mm	450 mm
Height Step	**Width** Step	**Depth** Step
220 mm	490 mm	225 mm

Model RM 5380

Height	Width	Depth
825 mm	490 mm	450 mm

4.6 Securing the refrigerator

In the sidewalls of the refrigerator, there are four plastic sleeves for securing the refrigerator. The sidewalls or strips attached for securing the refrigerator must be prepared to hold the screws firmly in place even when under increased load (while the vehicle is moving). Fastening screws and caps are supplied with the refrigerator.

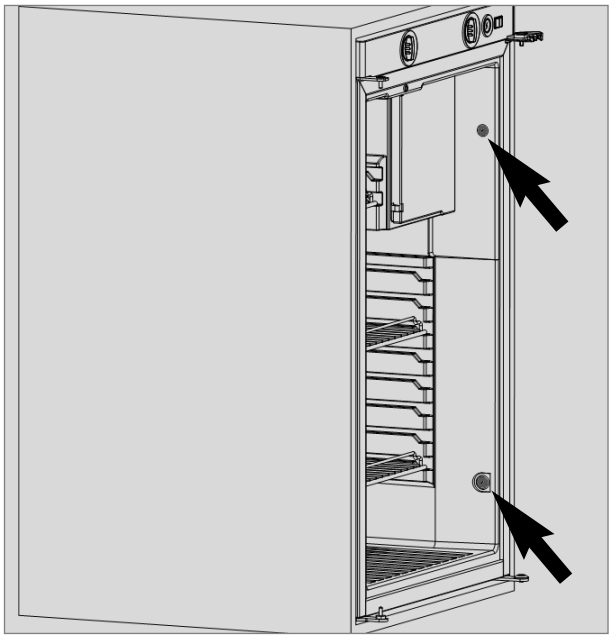


Fig. 27

CAUTION!

Always insert screws through the sleeves provided as otherwise components laid in foam, such as cables etc., could be damaged.

After the refrigerator is put in its final place, secure the screws into the wall of the recess. The screws must penetrate the casing of the refrigerator.

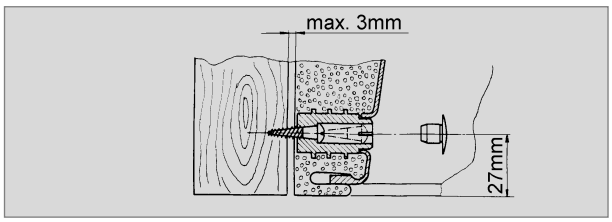


Fig. 28

4.7 Inserting the decor panel

- Remove the door.

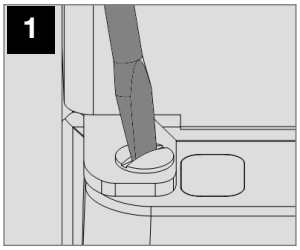


Fig. 29

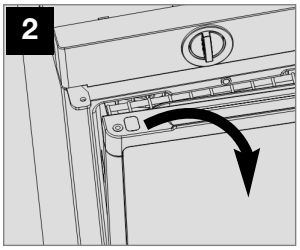


Fig. 30

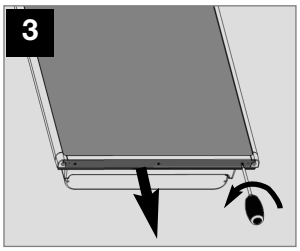


Fig. 31

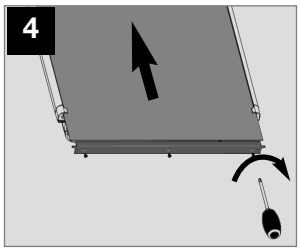


Fig. 32

- Loosen three screws of the lower trim moulding and remove trim moulding.
- Fit new panel and slide it upwards as far as possible.
- Fit the trim moulding back in place.
- Fit the door on the hinge pin.

Decor panel dimensions :

Model RM 5310

Height	Width	Thickness
532 +/-1 mm	453 +/-1 mm	max. 3,8 mm

Model RM 5330

Height	Width	Thickness
740 mm	453,5 mm	max. 3,8 mm

Model RM 5380

Height	Width	Thickness
740 mm	453,5 mm	max. 3,8 mm

4.8 Gas installation

WARNING!

The gas connection shall be carried out by specialised personnel* only.

** Specialised personnel are accredited experts who are able, by virtue of their training and knowledge, to vouch for the correct installation and implementation of the leakage test.*

- **Observe the regulations stated in section 2.1 .**
- **This refrigerator is provided for installation within liquid gas equipment and must be run exclusively on liquid gas (propane, butane) (no natural gas, town gas).**
- **An AGA Approved LP Regulator must be fitted to the gas supply. The pressure regulator must concur with the operating pressure specified on the rating plate of the appliance. The operating pressure corresponds to the standard pressure of the country of specification.**
- **Only one connection pressure is permissible for any one vehicle! A plate showing the permanent, clearly legible notice must be displayed in full view at the point where the gas cylinder is installed.**
- **The gas connection to the appliance must be installed securely and free of stress using pipe connectors and must be securely connected to the vehicle (a hose connection is not permissible) .**
- **The gas connection to the appliance is 1/8"BSP Female (s. figure 33).**
- **The refrigerator must be equipped with a shut-off valve allowing to cut the supply line. Such a shut-off device must be readily accessible to the user.**

Before Leaving - Check all connections for gas leaks with soap and water. DO NOT use a naked flame for detecting leaks. Ignite the burner to ensure correct operation of gas valve, burner and ignition. When satisfied with the appliance, please instruct the user on the correct method of operation. In case the appliance fails to operate correctly after all checks have been carried out, refer to the authorised service provider in your area.

Gas connection

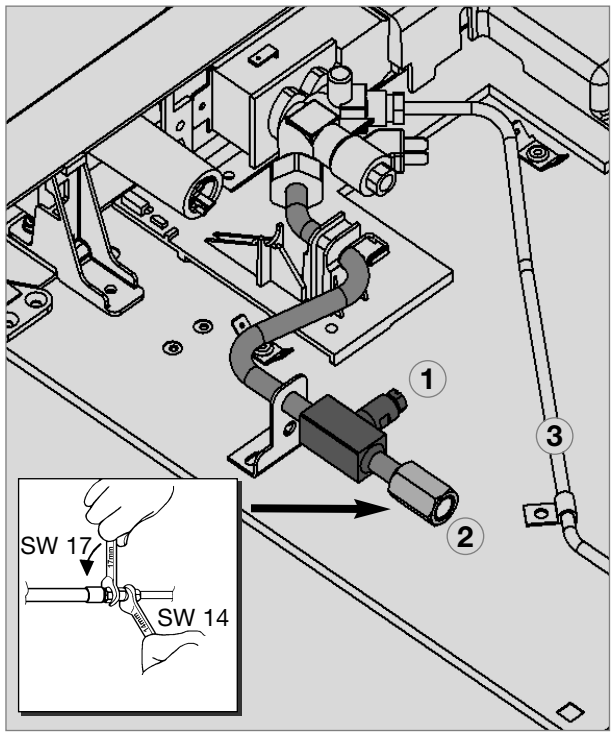


Fig. 33

1. Testing point
2. Connection to gas supply
3. Pipe to gas burner

Gas pressure

Refer to data label.

The refrigerator must be equipped with a gas cock in the supply line to allow the supply to be disconnected. Such a cut-out device must be readily accessible to the user.

When using **LPG gas (tank)**, please consider that the burner needs cleaning at shorter intervals due to the gas combustion method (2 - 3 times per year recommended).

4.9 Electrical installation

WARNING!

The electrical installation shall be carried out by qualified personnel only.

** Specialised personnel are accredited experts who are able, by virtue of their training and knowledge, to vouch for the correct installation.*

- **The electrical installation must be in accordance with the national regulations of the respective countries.**
- **The connection cables must be routed in a way to prevent contact with hot components of the unit/burner or with sharp edges.**
- **Changes to the internal electrical installation or the connection of other electrical components (e.g. external fan) to the internal wiring of the appliance will render the e1/ CE admittance as well as any claims from warranty and product liability void!**

4.9.1 Mains connection

- **The power should be supplied by a properly grounded socket outlet or a grounded non-detachable connection. Where a socket outlet with mains supply is used, the outlet must be freely accessi ble.**

  Should the connection cable be dama ged, have it replaced by Dometic Customer Services or by qualified per sonnel to avoid hazards.

We recommend leading the power supply via a board-side fuse protection.

4.9.2 Battery connection

The machine's 12V connection cable is connected (observing correct polarity) to a terminal strip. The wiring for the heating element (refer to A, B wiring diagram connections; connection cable white/red) must be direct and by the shortest possible route to the battery or electric generator.

Cable cross sections and cable lengths :

Motorcaravan & Caravan (inside)

4 mm^2	< 6 m
6 mm^2	> 6 m

Caravan (outside)

min 2,5 mm^2 (EN1648-1)

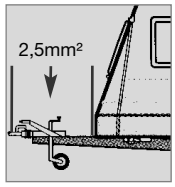


Fig. 34

Provide a 16 A fuse to protect on-board 12 V circuit.

In order to ensure that the 12V power supply is shut off when stopping the engine (otherwise the battery would discharge within a few hours), perform the power supply to the heating element (cf. page 20, connection A/B in wiring diagram) in a way to have the 12V supply only live while the vehicle ignition is switched on.

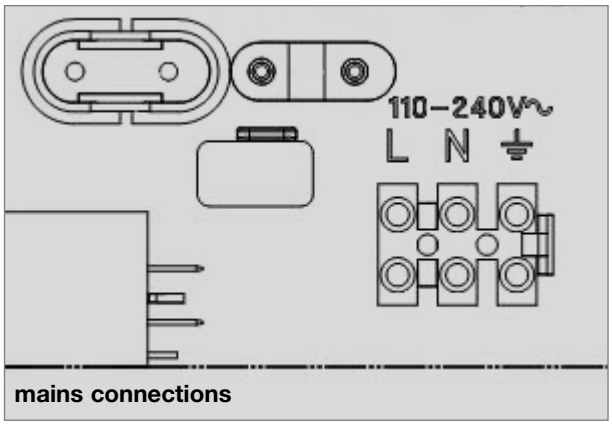
The connection C/D (interior light, cable black / violet) must be permanently provided by a 12V DC power supply to be protected by a 2A fuse.

CAUTION!

If the appliance is installed in a caravan the respective leads for the 12V+ and 12V- connections A/B and C/D must not be connected to each other on the caravan-side (EN 1648-1).

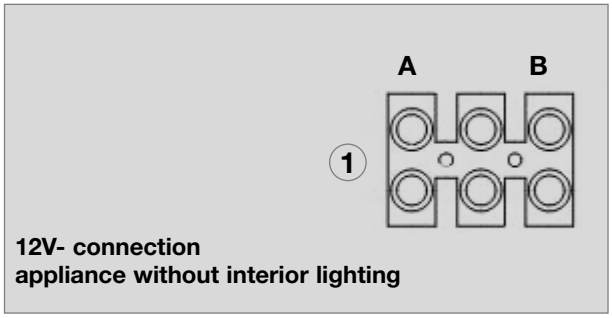
4.9.3 Terminal block

Connections :



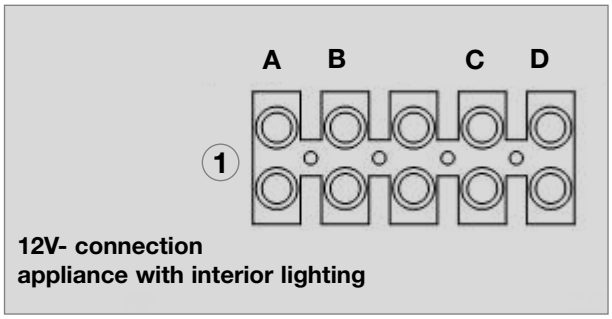
mains connections

Fig. 35



12V- connection
appliance without interior lighting

Fig. 36



12V- connection
appliance with interior lighting

Fig. 37

(1) A = Ground heating element DC
B = Positive connection, h.e. DC
C = Ground interior lighting
D = Positive connection, interior lighting

4.9.4 Wiring diagrams

Wiring diagram RM 5xx0 without interior lighting

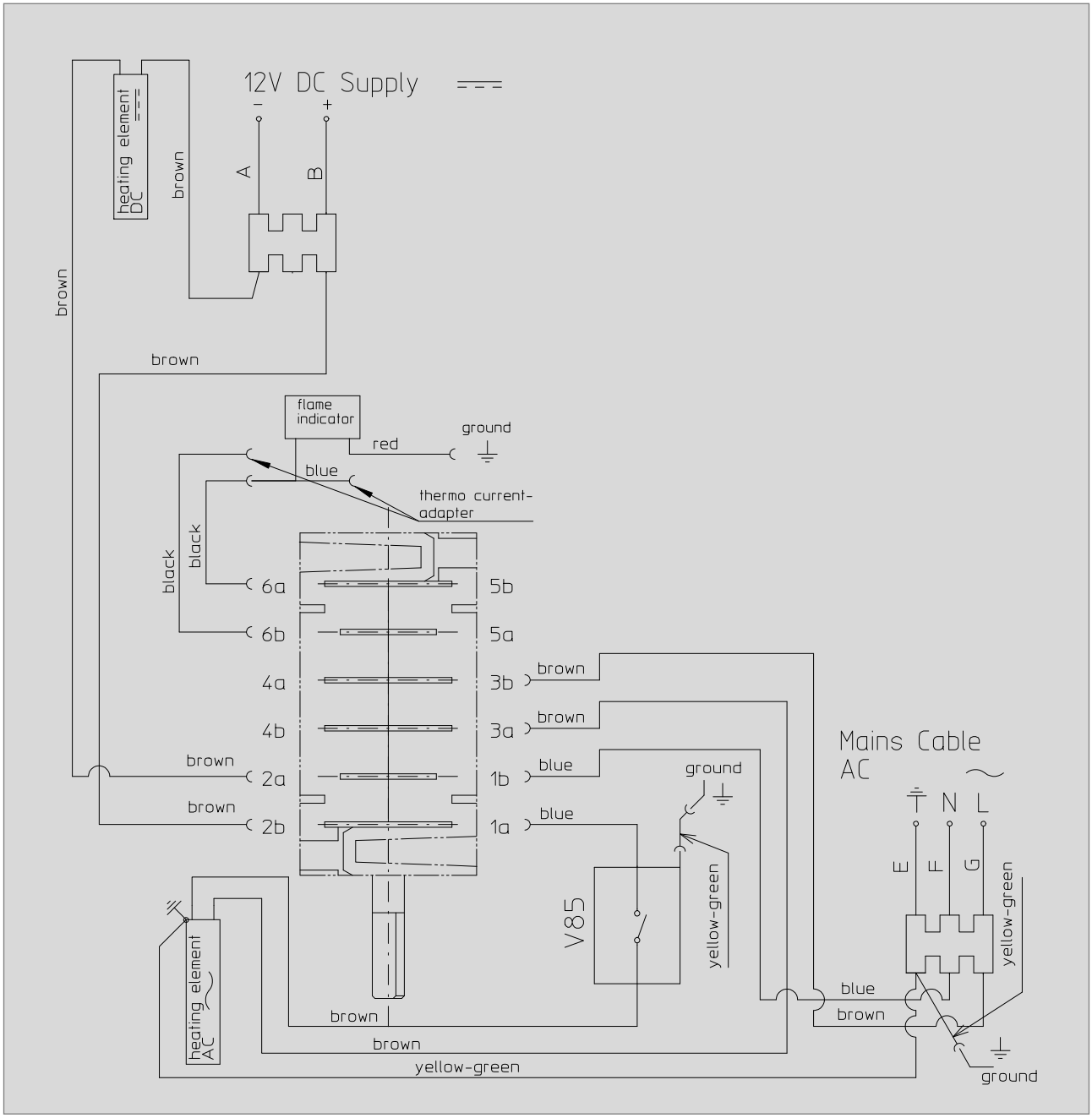


Fig. 38

Connections

A = ground heating element 12VDC
B = plus heating element 12VDC

Wiring diagram RM 5xx0 with interior light

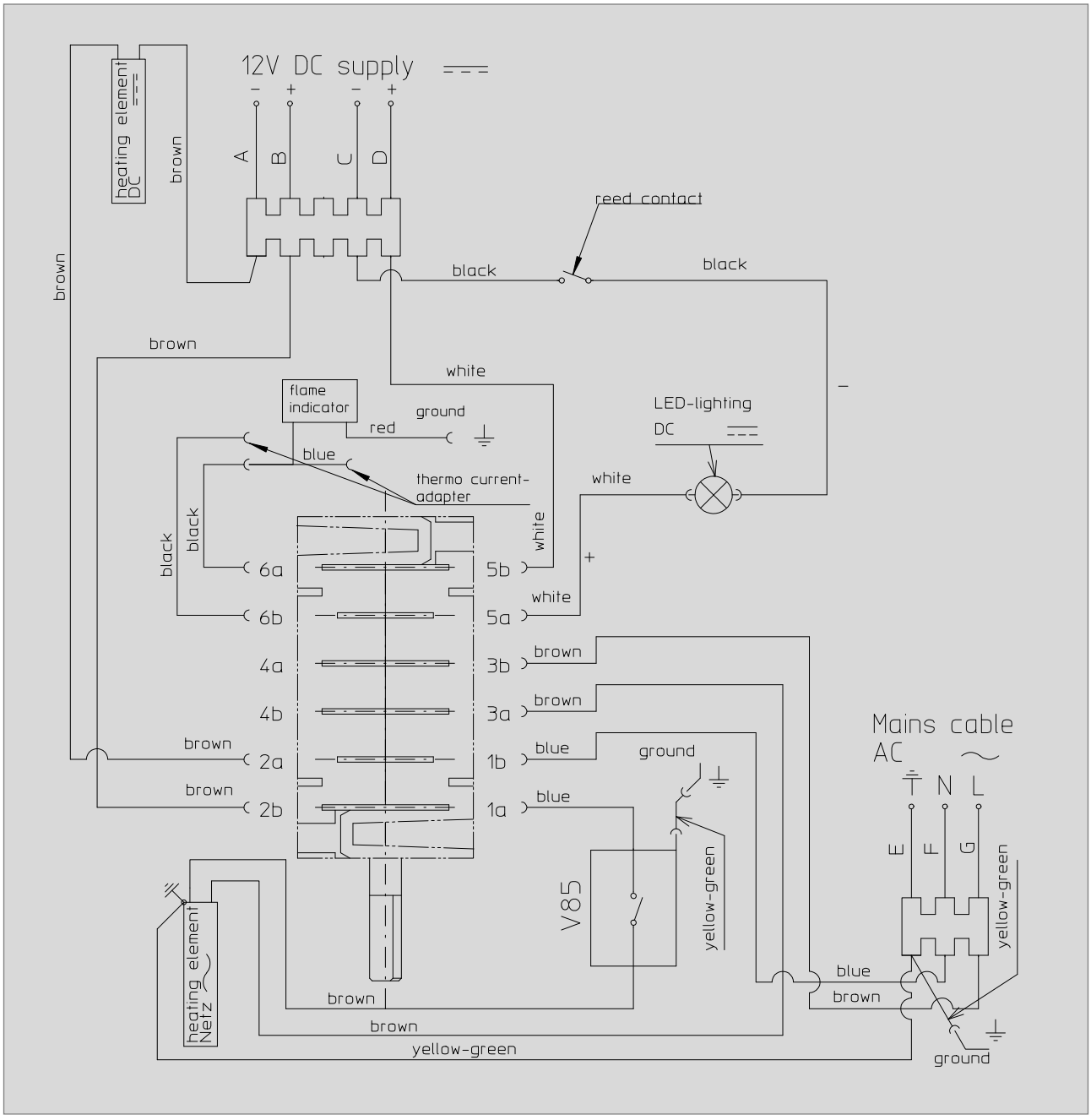


Fig. 39

Connections

A = ground heating element 12VDC
B = plus heating element 12VDC
C = ground interior light 12VDC
D = plus interior light 12VDC

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